

## Abstract of the Disclosure

### CONTROLLED POLYMERIZATION

- 5           The present invention discloses an emulsion polymerization process that comprises: (1) preparing an aqueous polymerization medium which is comprised of (a) at least one monomer, (b) a polymerization control agent, and an emulsifier, wherein the emulsifier is prepared in-situ within the aqueous polymerization medium; and (2) initiating polymerization of said monomer within the aqueous polymerization medium.
- 10       The subject invention more specifically reveals an emulsion polymerization process that comprises: (1) preparing a monomer solution which is comprised of (a) at least one monomer, (b) a conjugate acid of a surfactant with a  $pK_a$  of less than 14, and (c) a controlled free radical polymerization agent; (2) preparing an aqueous medium which is comprised of (a) water, and (b) a conjugate base of a weak acid wherein the  $pK_b$  of the
- 15       base is less than 14; and (3) mixing the monomer solution with the aqueous medium under conditions that result in the in-situ formation of an emulsifier, and (4) initiating free radical polymerization.